

## Hazard Analysis Form

This form can be used by Fermilab Employees, Fermilab Supervisors, Fermilab Task Managers, Construction Coordinators, Service Coordinators, and Fermilab Subcontractors. This is a dynamic document which may require modification as the project moves from start to finish and should be readily available at the site where the work is being performed.

**Note: Not all sections of the first page are applicable to every job or task, complete what is necessary for your specific job or task.**

Job Title Move Marx Modulator Cabinet and Marx Charging Supply Cabinet

Job Location Start location: AD/EE support Test Area to Linac Gallery – LRF5 region

Contract/Work Order # \_\_\_\_\_

### TO BE COMPLETED FOR WORK INVOLVING SUBCONTRACTORS

#### Subcontractor (if applicable)

#### Fermilab

Company \_\_\_\_\_ Project Manager \_\_\_\_\_

Project Manager \_\_\_\_\_ Phone \_\_\_\_\_

Phone \_\_\_\_\_ Page \_\_\_\_\_ TM/CC/SC \_\_\_\_\_

ESH Rep. \_\_\_\_\_ Phone \_\_\_\_\_ Page \_\_\_\_\_

Phone \_\_\_\_\_ Page \_\_\_\_\_ ES&H Rep. \_\_\_\_\_

ESH Rep. \_\_\_\_\_ Phone \_\_\_\_\_ Page \_\_\_\_\_

Phone \_\_\_\_\_ Page \_\_\_\_\_

### AT LEAST TWO SIGNATURES ARE REQUIRED

☒ Prepared 

Date 10/20/2016

Print Name FERNANDA G. GARCIA

☒ Accepted 

Date 10/26/2016

Print Name William PELlico

☐ Accepted as noted \_\_\_\_\_

Date \_\_\_\_\_

Print Name \_\_\_\_\_

**Description of Work:** Transport the Marx Modulator Cabinet and its Charging Supply Cabinet from the AD/EE support test area to the Linac gallery – LRF5 region.

**Personal Protective Equipment:** (Check protective equipment required for the job.)

- |  |                                       |   |
|--|---------------------------------------|---|
| <input type="checkbox"/> Safety glasses                            | <input type="checkbox"/> Side shields | <input type="checkbox"/> Chemical splash goggles            |
| <input type="checkbox"/> Hearing Protection                        | <input type="checkbox"/> Hard Hats    | <input type="checkbox"/> Impact goggles                     |
| <input type="checkbox"/> 3.0 Brazing goggles                       | <input type="checkbox"/> Rubber apron | <input type="checkbox"/> Hot/Cold thermal protective gloves |
| <input type="checkbox"/> Face shield                               | <input type="checkbox"/> Respirators  |   |
| <input type="checkbox"/> X Leather gloves                          |                                       |   |
| <input type="checkbox"/> Chemical-resistant gloves (specify type): |                                       |   |

☐ Other required PPE (specify):

Steel-toe shoes

☐ Fall protection equipment (specify):

**Environmental Aspects (check one):**

- ☐ Yes, I have thought about the environmental aspects of this job and will document such aspects and mitigation steps within this document.
- ☒ X Yes, I have thought about the environmental aspects of this job and no such credible aspects exist and therefore do not need to be written in this document.

**Equipment required for the job:** (List the tools needed to perform the job.)

Forklift, metal panels

**Work Plan History Information:** (List any lessons learned incidents from this job, tips from previous jobs)

**Improvement/Feedback:** At the conclusion of the job, the Task Manager, Supervisor and/or Project Leader shall work with those involved to consider lessons learned and receive feedback in order to improve future work plans.

**Check One:**

- ☒ X Yes we have considered lessons learned and accepted feedback on this job and will communicate such information so that future work plans may be improved.
- ☐ Yes we have considered lessons learned feedback and determined that future work plans do not need to be improved.

*Utilizing the format below, identify hazards and environmental aspects, and their corresponding safety precautions/procedures to mitigate hazards. Use as many sheets as necessary.*

### HAZARD ANALYSIS

Step	Description	Hazards/ Environmental Aspects	Precautions / Safety Procedures
1	<p>* The Marx Modulator Cabinet Main structural material: Steel, Length 12 ft Height: 8 ft Width: 4 ft Estimated weight: (unloaded) ~ 3,000 lbs</p> <p>* Charging Supply Cabinet Main structural material: Steel, Length: 6 ft Height: 7 ft Width: 2-1/2 ft Estimated weight: (unloaded) ~ 1,500 lbs</p>	Forklift, jacks	<p>MSD personnel will handle the transport of the cabinets. The pull/lift will be done from the base of the cabinet.</p> <p>A trained forklift operator together with two spotters and a task manager will conduct the move. The team is composed of AD mechanical experts. The equipment is owned by the laboratory and the team is familiar with the equipment.</p>
2	Overcome uneven terrain	Tip over	<p>Mitigation to uneven terrain will be done with metal plates to smooth the ground.</p> <p>The cabinets will be slowly moved, especially when passing thru the parking lot and overcoming the ramp to the gallery.</p> <p>Cabinets will be lift just enough to clear the ground.</p>
3	Barricade the transport route	Traffic interruption	Security is aware of the move and will assist with traffic control around the parking lot.
4	General work environment	Environmental	Maintain good housekeeping practices could alleviate the potential of injuries, such as trip hazards.
5			

## GUIDELINES FOR COMPLETING THE HAZARD ANALYSIS

Phase of Work	Safety Hazard	Precautions/Safety Procedures
<p>Examining a specific job by breaking it down into a series of steps or tasks, will enable you to discover potential hazards employees may encounter.</p> <p>Each job or operation will consist of a set of steps or tasks. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. To determine where a step begins or ends, look for a change of activity, change in direction or movement.</p> <p>Picking up the box from the conveyor and placing it on a hand truck is one step. The next step might be to push the loaded hand truck to the storage area (a change in activity. Moving the boxes from the truck and placing them on the shelf is another step. The final step might be returning the hand truck to the receiving area.</p> <p>Be sure to list <i>all</i> steps needed to perform the job. Some steps may not be performed each time; an example could be checking the casters on the hand truck. However, if that step is generally part of the job it should be listed.</p>	<p>A hazard is a potential danger to a person or equipment. The purpose of the Job Safety Analysis is to identify ALL hazards- both those produced by the environment and those connected with the job procedure.</p> <p>To identify hazards, ask yourself these questions about each step:</p> <p>Is there a danger of the employee striking against, being struck by, or otherwise making injurious contact with an object?</p> <p>Can the employee be caught in, by, or between objects?</p> <p>Is there potential for slipping, tripping, or falling?</p> <p>Could the employee suffer strains from pushing, pulling, lifting, bending, or twisting?</p> <p>Is the environment hazardous to safety and/or health (toxic gas, vapor, mist, fumes, dust, heat, or radiation)?</p> <p>Are there electrocution hazards?</p> <p>Close observation and knowledge of the job is important. Examine each step carefully to find and identify hazards- the actions, conditions, and possibilities that could lead to an accident. Compiling an accurate and complete list of potential hazards will allow you to develop the recommended safe job procedures needed to prevent accidents.</p>	<p>Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the hazards that could lead to an accident, injury, or occupational illness.</p> <p>Begin by trying to: 1) engineer the hazard out; 2) provide guards, safety devices, etc.; 3) provide personal protective equipment; 4) provide job instruction training; 5) maintain good housekeeping; 6) insure good ergonomics (positioning the person in relation to the machine or other elements in such a way as to improve safety).</p> <p>List the recommended safe operating procedures. Begin with an action word. Say exactly what needs to be done to correct the hazard, such as, "lift using your leg muscles." Avoid general statements such as, "be careful", "use caution", and "be alert".</p> <p>List the required or recommended personal protective equipment necessary to perform each step of the job.</p> <p>Give a recommended action or procedure for each hazard.</p> <p>Serious hazards should be corrected immediately. The JSA should then be changed to reflect the new conditions.</p> <p>Finally, review your input on all three columns for accuracy and completeness. Determine if the recommended actions or procedures have been put in place. Re-evaluate the job safety analysis as necessary.</p>

**I have reviewed this hazard analysis and I understand the hazards and required precautionary actions. I will follow the requirements of this hazard analysis or notify my supervisor or Fermilab contact if I am unable to do so.**

**Name and ID (please print)**

**Signature**

**Date**

Jasen KUBINSKI

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